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ACUTA NEWS

THE VOICE OF
TELECOMMUNICATIONS
IN HIGHER EDUCATION

Association of College & University Telecommunications Administrators

October 1995

Ethernet projects bring network services to residence halls

Contributed by Dan Joyce, Virginia Tech, and Mark Kuchefski, Indiana University

Between May 22 and August 16, 1995, Ethernet connections were installed in 700 student rooms located in four residential halls on the Virginia Tech campus. This effort completes the first phase of the University's plan to upgrade existing 19.2kbs data connectivity which was installed in 1988 in 4500 residence hall rooms. The Communications Network Services (CNS) project involved close coordination with other departments, the expenditure of 13,000 work-hours, installation of 118,000 feet of Category 5 copper cable, installation of 40,996 meters of fiber, renovation of three equipment rooms, installation of 10,000 square feet of new ceiling, and completion of many other related tasks. Each new communications outlet has two RJ-45 jacks and two multimode fiber (left dark for future applications). Six CNS employees supervised twenty-four students and wage personnel who were hired for the project.

Upgrading the existing communications infrastructure is considered critical for the University to maintain its leadership position in implementing advanced information technologies. The University intends to request additional funds and continue the ethernet residence hall upgrade campuswide in recognition of the fact that this capability extends the "virtual library" throughout the entire campus. Currently, CNS provides ethernet capability to faculty, staff, and students through over 7100 outlets located in 94 buildings.

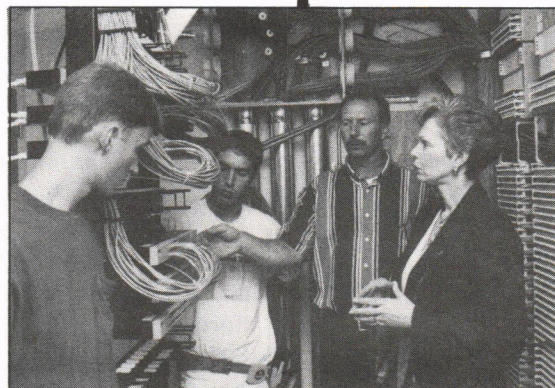
University Provost Peggy Meszaros said, "The project to install ethernet systems this summer represents an excellent example of collaboration and a 'can do' approach across academic and administrative units. The ultimate benefit achieved is that our students will have an enhanced learning environment through networking and computing technology."

Contact: Doug Jones, jonesd@vtvm1.cc.vt.edu or phone (540) 231-4340. (Virginia Tech's ACUTA rep is Doris Stock.)

In Bloomington, Indiana, Communication Services and the Halls of Residence at Indiana University are working together to add in-room ethernet connections to three resident centers in 1995. At the completion of this project about 75% of the 8,900+ rooms will be equipped with ethernet connections. Additional centers will be completed in 1996.

In addition to the in-room connections, a dedicated dial-up modem pool service has been established for the residents who live in Halls of Residence facilities that have not yet been equipped with ethernet connections. This service, that provides PPP access, will be available for Hall's residents until the remainder of the living quarters are provided with ethernet connections. The in-room connections and the public computing clusters that are located in each of the residential centers provide students with access to the full range of network services available at Indiana University. In addition to the standard network services, the Halls of Residence operates a group of servers that provides metered access to applications software and local laser printing services. Resident students can receive assistance with the installation and use of these services from Computing Assistants that reside in each of the residential centers. (ACUTA representative at Indiana University is Mark Kuchefski.)

Meanwhile, in the northeast, the State University of New York at Albany also is making 550 ethernet connections available this fall to students in five networked residence halls. The University has already installed port-per-pillow data wiring to all dorm buildings. The cabling infrastructure will eventually afford all 6,000+ residential students direct access to online services. Contact: resnet@albany.edu. (Gary Pelton represents SUNY Albany at ACUTA events.)



Virginia Tech Provost Peggy Meszaros listens as ethernet project manager Doug Jones describes work in Slusher Tower. Also pictured are student workers Clay Scott and Tim Stubbs.

INSIDE...

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- 11 From ACUTA Headquarters

The September ACUTA Board conference call was filled with news and information. President Dave O'Neill gave the

Board an update on the status of ACUTA's Policy and Procedures Manual, his search to fill the Director-at-Large appointment and issues in telecommunications presented to him from our Canadian member institutions. He gave assignments to the Board to address these and other issues. The Board heard from Jan Weller, Program Committee Chair, who said members could look forward to a full year of helpful and timely information at seminars as a result of the work of the committee.

Other items on the agenda included:

- A review of the June, 1995 financial statements
- A progress report on selection and use of a logo to celebrate our 25th year
- Approving up to 2 Emeritus Affiliate members to serve on each ACUTA committee, to provide opportunities for continuing contributions from retired members
- Filing of comments with the FCC regarding PBX Caller ID
- Committee reports and committee member appointments
- Selecting Nashville, Tennessee as the site of the 1999 Annual Conference
- Discussion of implementation of the Strategic Plan by committees

Submitted by:
Anthony R. Tanzi, RCDD
Brown University
ACUTA Secretary/Treasurer

Welcome New Members

September, 1995

Institutional Members

- Indiana Univ. of Pennsylvania, Indiana, PA. John William Miller, ph. 412/357-7851; Tier 4
- Univ. of Dallas, Irving, TX. Patrick Daly, ph. 214/721-5145. Tier 2
- Univ. of Texas Houston Health Science Center, Houston, TX. Richard Riker, ph. 713/792-2225. Tier 2

Emeritus Member

- Howard Lowell (retired from Colo. State Univ.), Ft. Collins, CO. Ph. 970/226-6262

Corporate Affiliates

BRONZE LEVEL

- Eastern TeleLogic Corp., King of Prussia, PA. Karen Moyer, ph. 610/992-8516

COPPER LEVEL

- Bell South Business Systems, Louisville, KY. Jackie White, fax 502/423-5791
- Telcom Systems Services, Inc., Wayzata, MN. William McKenna, ph. 612/476-5532

Quoteworthy

"It is the learners that inherit the earth. The learned find themselves equipped to live in a world that no longer exists."

—Eric Hoffer

"You make a living from what you get...You make a life from what you give."

(Source unknown)

Association of College and University Telecommunications Administrators ACUTA NEWS, Volume 24, No. 10

PRESIDENT: David E. O'Neill, Washington State University

PRESIDENT ELECT: Dr. James S. Cross, Michigan Technological University

SECRETARY/TREASURER: Anthony R. Tanzi, Brown University

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President's Message

"Times Change."

J. Wayne from the film
"Big Jake"

This is one of my all-time favorite lines from my all-time favorite film actor. It was spoken in response to the demise of a resource and way of life fondly recalled in an almost submissive fashion by a character surrounded by change.

Activity here at Washington State University during the month of September was, I'm sure, not unlike that for most of you. New and returning students and faculty pressing onto campus, the first home football game of the season, and long lines at financial aid and telecom reminded us that we work in a college environment. We added a bit of a twist to it this year, however. After three years of designing, building, and installing, the new WSU**net** was turned up.

This digital network is the result of a complete communications infrastructure renewal including new switch rooms, communications equipment rooms, cable, coax and fiber optics, high speed data electronics, a video switch and control room with remote control capabilities from the class rooms and—oh yeah, a new telephone switch with its digital instruments and new voice mail. In addition, a new network management system with work order and trouble ticket capabilities was installed. And not wanting to leave any stones unturned, we included a new billing system.

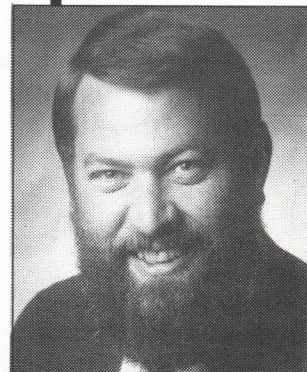
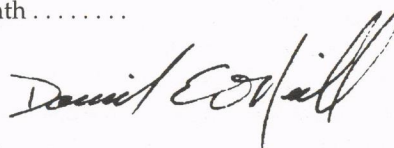
Although training sessions were mandatory for these new resources and sessions were generally well attended, the Information Technologies Help Desk first thing on Monday morning was "busy." Our Help Desk and technical staffs

were only a few steps ahead of the general campus population with regard to knowing and understanding all the nuances of our newly energized resource. Remaining staff and management were "busy" working on the hot spots of one kind or another. Few have had little time to do more than look up and see where they're going. We now have the central core academic and administrative buildings on line and will have the remaining campus buildings and residence halls on line by mid January. It has been hard and often difficult work, but we now stand just across a technological threshold looking into a new world.

As the dust begins to settle on this first phase, I can't help but recall a number of isolated instances these past months. Some were technical and some were personal, but the ones I remember most vividly are those in which people's space, routines, or expectations were challenged. Some said the new technologies were unnecessary. Some said the new technologies were too costly and insufficient. Some were just uncomfortable because the technologies were new and not well understood. Most however, recognized pending impacts as a result of changing to the new technologies. In a few instances attempts were made to mitigate these impacts by limiting or attempting to avoid the changes.

Change is, however, inevitable and surrounds us all. It is in our professional as well as our personal lives. Some is foreseen, planned for, and managed. Some is not. And like the character in the film, to some changes we must simply submit and move on.

'til next month



Dave
O'Neill

Washington
State
University

ACUTA
President

Winter Seminars Phoenix, Arizona Jan. 21-24, 1996

I: Wireless Technologies Tutorial

What is it?...How do I use it?...What does it cost?...Can I afford it?

This tutorial is ACUTA's initial examination of wireless basics and voice, data, and video applications, including an analysis of various technologies, costs, range, reliability, implementation problems, standards, partnerships, the value of wireless to the campus and wireless' impact on our cable plant and PBX investment.

II: Student Services: A Suite of Services

Student Services is no longer limited to providing dial tone and toll services to students. Universities are now challenged by students to provide a "suite of services" for all students that includes 1+/0+ toll service, one card/debit card, cable TV, data access, voice messaging, and library services. What is Telecommunications' role in providing these services? Can telecommunications providers be both a profit center and a value-added provider? This track offers an analysis of these initiatives, hidden costs, and the challenges associated in implementing and managing these services.

Details will be available early in November.

To obtain registration information via the Internet: See ACUTA's Home Page at <http://www.acuta.org>.

Save
\$50

Register by
December 22

Disaster recovery of telephone switches

Part II: After the loss

Ken Greenough, Ph. D.
Restoration Technologies, Inc.

(Part I: *Before the loss* appeared in the August issue of the *ACUTA News*)

The first 24 hours

Disaster recovery activities must be initiated after a loss to protect all telephone switch components from further damage from smoke and water exposure. Movable equipment should be relocated to a predetermined secure area where temperature and humidity can be controlled to arrest corrosion and dry out equipment. Portable dehumidifiers and/or outside moisture control services can provide this environmental protection until detailed restoration and recovery efforts begin.

Equipment remaining at the loss site can be pretreated with corrosion inhibitors to provide temporary protection against continued deterioration of critical metal surfaces contaminated with corrosive smoke or water deposits. Wherever possible, temporary barriers should be erected to provide additional protection and isolation of telephone equipment in the loss environment. Detailed step-by-step loss control procedures that users should perform in the first twenty-four hours after a loss are available from qualified catastrophe response companies. These common sense emergency measures should always be followed up by complete restoration programs carried out by telephone equipment recovery specialists.

Follow-up restoration: A coordinated program

Combustion by-products from burnt construction materials and plastics are present as volatile corrosive compounds and smoke particles that condense in films on all exposed surfaces. Reaction with ambient moisture is sufficient to continue the corrosive actions of these deposits. Their early detection and removal is vital to a successful restoration program. Selection of appropriate cleaning procedures and identification of areas of highest contamination is accomplished early in a coordinated facility and equipment restoration program. To ensure

continued operational integrity and long term reliability of telephone equipment, the corrosion induced surface reaction products and residual smoke deposits must be removed as soon as possible. Likewise, all contaminated facility surfaces and structures must be cleaned to eliminate cross contamination of previously cleaned equipment. HVAC duct systems serving the telephone switch room, ceiling tiles, and above air plenums, areas under raised computer room floors, and wall surfaces trap loss-related contamination that will slowly out-gas and

compromise the integrity of the controlled switch room environment. Safe access to the switch room environment must also be provided by removing surrounding debris and dangerous structures, along with any stored toxic or hazardous materials. Only a carefully controlled and coordinated recovery program can maximize the efficiency of these diverse equipment and facility cleanup efforts with minimum disruption of the telephone user's ongoing activities.

Telephone equipment restoration

The selection of telephone equipment to be restored is usually limited to items that have not seen excessive heat beyond manufacturer's ratings

(usually based on internal device specifications), power surges (evidence of arcing), and water exposure when energized. Typically, telephone equipment can be exposed to temperatures up to a maximum of 158° F for several days before irreversible device damage occurs to internal plastic packaged devices. External ambients of 130° F can be tolerated by the entire telephone switch system before long term degradation occurs. It is unlikely that any of the heat-sensitive components of a telephone switch system come close to permanent damage without significant visible heat damage to external parts, i.e., discoloration of painted surfaces, melting of plastics, etc. For equipment that has been recovered by restoration, a monitored period of post-loss operation of up to three months is typically sufficient to reveal any loss-related operational anomalies.

Recovery steps for loss-threatened equipment

- Provide description of loss-damaged equipment
- Assess recovery options: restoration vs. replacement costs/scheduled trade offs
- Initiate restoration, replacement and/or repair on a priority need basis
- Implement previously defined telephone equipment/service back-up plan
- Coordinate restoration and repair activity with equipment vendor
- Provide for recertification and re-establishment of maintenance policies as required

Restoration of contaminated telephone equipment free of the effects of thermal degradation and electrical arcing is a relatively straightforward matter. The equipment is disassembled to the extent necessary to get at all contaminated surfaces. Aqueous based detergent solution and water displacement/surface degreasing solvents are applied in such a way as to ensure residue-free removal of a wide range of contaminants. Controlled HEPA vacuuming of lightly contaminated surfaces may be adequate in certain loss situations. The restoration procedures used to clean electronic assemblies are similar to those used in the original manufacturing cycle. Both cleaning processes are capable of removing surface contamination to levels specified by military standards for electronic assemblies used in high reliability aerospace applications. A proper telephone equipment recovery program provides detailed documentation of each specific equipment item cleaned in the format of an equipment condition report that includes such information as model, serial number, degree and type of contamination, restoration services performed, diagnostic tests, functional operation, recertification, and more. Complete itemization of restoration activities provides the telephone switch user with a documentation package that is useful in loss assessment and claim settlement.

Insurance considerations

An integrated equipment recovery program also meets the terms of a large number of insurance policies that are only required to return damaged equipment to a pre-loss condition. For those losses where equipment restoration is not possible, many policies are only obligated to replace non-restorable equipment with "like kind and quality"—not with new equipment as most telephone switch users would hope for! It behooves users to know the terms of their policies and to understand their own obligations to protect their equipment as quickly as possible from further damage after a loss.

In all too many losses, marketing representatives of the equipment vendor too quickly declare that all smoke and water damaged equipment must be replaced without consideration of restoration. This may be the case for new equipment still under a first year warranty. However, follow-up technical discussions with the vendor's engineering/field service personnel and the restoration specialists supporting the switch user and/or technical consultants hired by the insurance company often result in agreement on appropriate restoration procedures to recover the majority of the equipment in question. The equipment vendor may require a conditional period of post-loss operation in the recertified equipment before reestablishment of the routine field service

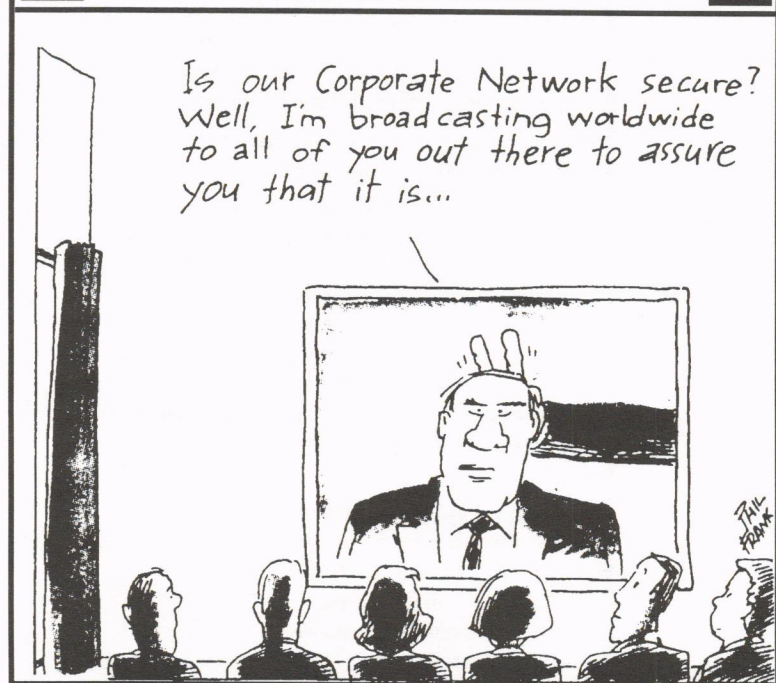
contract. A typical post-loss service contract may provide for additional time and material charges (above the standard service policy rate) for any equipment maintenance problems that can be directly related to the loss. The conditional period of post-loss operation should not exceed six to twelve months since loss related problems, if they occur at all, will typically show up in the first three months of operation after the loss.

In those few instances where the original equipment vendor is not willing or is unable to recertify or service the restored equipment, the user can turn to reliable third party service organizations for support. Equipment certification and maintenance is an economically viable and competitive business that is attractive to several large service organizations. These organizations will test and repair restored equipment as required and place it under the same type of field service maintenance contract offered by the original equipment vendor. Most full service restoration companies have excellent working relationships with third party service companies and have demonstrated the effectiveness of this alternate approach to post-loss recertification.

Editor's Note: ACUTA thanks Dr. Ken Greenough of Restoration Technologies for contributing this article in two parts for our newsletter. For more information, contact Restoration Technologies, 3695 Prairie Lake Court, Aurora, IL 60504. Phone 708/851-1551.

TELETOONS

BY FRANK AND TROISE



PBX call processing basics

Alan Sulkin

President, TEQConsult Group

As a consultant and advisor to many large communications system customers, I have discovered that the fundamentals and import of switch call processing capabilities are poorly understood. A PBX system's call processing rating is basic to the product's functional performance, and to its future expansion and feature growth. Call processing limitations may prove more important to a customer than any feature or function implemented on the system.

While most RFPs include one or two clauses outlining switch network access requirements, call processing needs are rarely covered. The majority of PBX customers will never approach the upper limits of their system's call processing capacity, but the demands of a college or university campus environment are likely to test the limits of a PBX. A sizeable number of ACUTA members may find that the switching system that was satisfactory at installation may be running out of power after years of

port additions and feature/function upgrades.

PBX call processing is usually expressed in terms of Busy Hour calls (BHC). There are two BHC measurements: call completions and call attempts. Because there are, unfortunately, no industry standard definitions by which to compare Busy Hour Call Completions (BHCC) and Busy Hour Call Attempts (BHCA), each switch manufacturer uses its own definition. Some manufacturers define BHCA as basic call set-up, e.g., provision of dial-tone, while the most basic definition of BHCC includes call set-up and dialing. Answer supervision may also be included as part of the call completion.

When comparing PBX system call processing ratings, another important factor comes into play: the type of call being attempted or completed. The most basic call is an intercom call between two telephone stations configured in the same PBX system. A more complex intercom call is between two telephones within a private network configuration across two switching systems. Obviously the former call requires less processing than a network-based call, even if the call is using private facilities.

The next call type level includes simple feature activation, such as placing a party on hold. More complex features, requiring additional processing power, include call transfer, multiparty conferencing, and consultation hold. Some calls to stations in which a call-forward state is activated also require more

processing to complete the call. Off-premises calls requiring trunking facilities also require more processing, as do incoming trunks calls. The more complicated the call routing pattern, the greater the processing burden.

The telephone instrument used to set-up a call is also a determining factor in the processing load. For most systems it requires less processing to use an industry standard 2500-type analog instrument as compared to a digital telephone, although the reverse is true for Intecom switches (designed for heavy digital terminal configurations). Instruments with multiline appearances, display fields, line/feature status indicators, and other extras (data interface, speakerphones, headset recorders, DSS modules) require more processing than basic single telephones. A close reading of some manufacturers' design specifications may reveal limits on digital telephone circuits, line button appearances, display fields, etc. Sometimes the limits may be exceeded, but only by severely degrading the system call processing rating.

One of the feature/function options with the most intensive burden on system call processing is Automatic Call Distribution. ACD options involve far more complex screening, routing, and handling of incoming/outgoing calls than basic intercom calls. It is not unusual for a PBX system's call processing rating to be degraded by about 50% when implementing advanced ACD feature packages. For example, implementing ACD on a Definity PBX degrades the call processing rating by about 30%; when an adjunct CTI processor link is implemented, the BHCC rating is even further degraded. Other PBX systems maintain a high BHC rating when implementing ACD, but the number of configured or active ACD agents is extremely limited as compared to standard telephone positions. If the main system processor is used to generate call center management reports, or used for customer programmable conditional routing applications, the BHC rating is likewise degraded. It is for this reason many manufacturers use adjunct applications servers to perform these functions for the PBX system, e.g., Siemens Rolm 9751 ACD/CCMS and Resume Routing servers.

Implementing ISDN PRI networking will also degrade system call processing for several likely reasons: the complexity of accepting and passing network-provided ANI digits; call-by-call service selection; network facility associated signaling; D-channel backup. Most currently installed PBX systems were not designed to handle all-digital trunking with out-of-band signaling. Future PBX systems will be designed to support broadband trunking interfaces requiring even greater processing loads, but these systems will have far more processing power than today's products.

It is almost impossible to compare manufacturer published numbers for PBX system BHC ratings, because there are no industry standard definitions or configurations.

Telecommunications Legislation

Everyone is watching and waiting for Congress to act on the proposed telecomm legislation. As of mid September neither the House nor the Senate had named candidates for the Conference Committee that will try to combine HR 1555 and S 652 into a revised piece of legislation to send to the White House for the President to sign—or veto. *Telecommunications Reports* (TR, 9/18) reported that the Senate was waiting for the House to make appointments. There is speculation as to why the delay: Some think the leaders are strategizing to get what they want in the final law. Others note committee structure has not yet jelled. One option calls for three or four permanent conferees plus several "floaters" who could participate only when selected provisions of the legislation are under consideration.

Some speculate that key legislators are doing all they can to delay things so the interexchange carriers (IXCs) have time to get their act together and negotiate change in their favor. The IXCs seem to be the big losers in HR 1555.

Vice President Gore made a speech on Sept. 12 strongly criticizing the telecom reform measures. He was quoted in TR (9/18) as saying

"Instead of being a commitment to the future, these bills, especially the House bill, represent a contract with 100 companies. The highest bidders, not the highest principles, have set the bar."

Exercise your influence: Contact your Senators and Representatives!

FCC hotline

The FCC's Office of Inspector General has created a hotline for people to report "waste, abuse, or mismanagement" within the agency. Information will be handled confidentially and callers will remain anonymous. Call 202/418-0473.

Slamming continues

Even with FCC restrictions and fines of \$40,000–\$500,000 the problem still shows up. The FCC has ruled that victims should not have to pay more than would have been charged by the preferred carrier. But it's very hard to determine the "would-have-been" charges if you have a big long distance bill. It has been proposed that the slammed company should not have to pay anything to the slammer as a way to stop the problem. The company with the half million fine told the judge that they were not at fault because the slamming was done by independent agents. The judge did not buy their argument.

PBX

Continued from page 6

With the advent of Computer Telephony Interface (CTI), manufacturers will need to re-evaluate their BHC configuration parameters, because desktop and client/server CTI calls will place more processing load on the PBX main system processor. A new level of CTI-generated commands and signaling between each desktop and the main CPU has the potential to crash a system if not properly configured.

It is very important to understand the manufacturer's call environment parameters used to determine their published call processing ratings. A manufacturer who bases its call processing rating only on intercom calls is overstating the system's capabilities in a real world environment. Until a few years ago, one well-known manufacturer actually based its BHCC rating on such a configuration until it changed its testing parameters. Some manufacturers base their BHC rating exclusively on voice-only analog telephone calls; others base their rating on a mix of voice and data calls generated by analog and digital instruments.

It is almost impossible to compare manufacturer published numbers for PBX system BHC ratings, because there are no industry standard definitions or configurations. Unless a consultant or customer is savvy enough to understand the configurations and assumptions behind the numbers, it becomes a game of chance selecting a PBX with sufficient call processing power to support current and future communications

applications. The only thing that can be stated with certainty about future customer communications applications is that they will increase in both number and complexity, if the past is any indication.

Selecting the right PBX system with sufficient call processing capacity for the next five or ten years is far more important than choosing a system based on the number of feature buttons on a telephone instrument, or whether the system will support ATM switching someday. Customers should have a strong sense of their selected switch supplier's future migration plans, because it will have a strong bearing on the product's future performance potential. Just as it is unlikely that a PBX system installed in 1985 could adequately support today's applications requirements, a system installed today may not be able to support a customer's communications environment in five years. The system you install today may run out of steam sooner than you anticipated, unless the manufacturer has formal plans to upgrade the processing system designed significantly during the next few years.

It has been my experience that too many customers neglect call processing requirements, while focusing on individual features and functions. The next time you go out for a bid to install a new PBX system, spend a little more time evaluating its system processing design and call processing limitations. Don't buy a system with all the frills if its engine can't provide the power to run it.

Editor's Note: This material is a summary of Alan Sulkin's presentation at the Annual Conference in July. Our thanks to Mr. Sulkin, who is president of TEQConsult Group, for providing this summary. Audio tapes of his presentation are available through the ACUTA office.

DC at a glance

Whitney Johnson
Northern Michigan University

Cal State-Long Beach installs intelligent payphones

Doug Matatall, Director, Millennium Marketing
Nortel/Northern Telecom

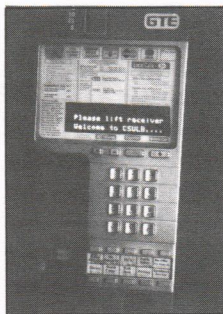
"Our goal is to give students the best possible service," says Mary Ann Dase, director of Communications and Office Services at California State University-Long Beach. "We do that by implementing the best available technologies whenever and wherever we can."

Toward that end, this past winter the school introduced the latest "smart" payphone technology to provide its 30,000-plus students with a more capable and convenient way to access campus services and information, as well as to provide one-touch access to the school's public safety department.

"Payphones play a very critical role here," explains Dase. "We are a very large commuter school, sitting at the crossroads of Interstates 405 and 605. As a result, students come from everywhere in Southern California. Cellular phones are a bit expensive for the average student," adds Dase, "so...they rely very heavily on payphones." Cal State has approximately 200 payphones located across its 320-acre, 62-building campus.

To date, the University—with the help of local service provider GTE—has deployed some 40 Nortel/Northern Telecom Millennium intelligent payphones in high-traffic areas, in both indoor and outdoor locations such as the student union, the student administration building, the bookstore, and the library.

The payphones feature a two-line x 20-character message display; 10 programmable quick-access buttons; and an interface for debit, credit, pre-paid, and smart cards for cashless transactions.



At Cal State, the ten programmable keys on each phone offer students one-touch, instant access to:

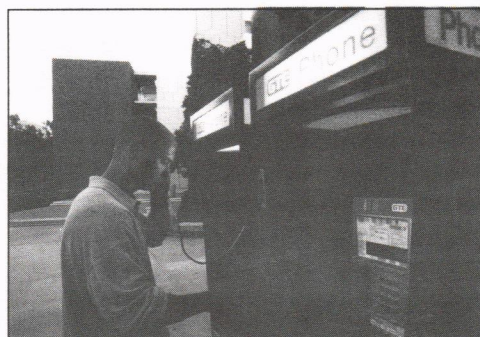
1. Voice response registration
2. Voice response financial aid; 3. FICA (for credit card registration payment);
- 4) Public Safety; 5) Business Office; 6) Library; 7) Health Center; 8) Bookstore;

9) Parking; and 10) Enrollment Services. Keys one through four are free calls; the others are charged calls.

"What we did is give students quick access to the kinds of services that we know they normally use," says Dase. "The four 'free buttons' are especially helpful during our peak calling periods—which are during registration in fall and spring. Students can obtain registration-related

information, for example, without having to go to the registrar's office in person and wait in line to get a 'quick' answer to their questions."

Proactive in providing students with popularly requested calling information, Cal State has programmed the displays to deliver the following scrolling message: "Welcome to CSULB. . . For tickets to athletic events, call 985-4949. For tickets to fine art events, call 985-5526. For housing information, call 985-4187. For student union info, call 985-4834. For university extension program info, call 985-5561."



Each desk-set payphone also offers a data port, allowing users to link portable PCs and PDUs to the public telephone network.

Of course, campus security is of paramount importance, and the "smart" payphones complement Cal State's overall public safety program. Students can access public safety from any one of the 20 outdoor "Blue Light" emergency phones (or by dialing "55411" on any campus phone). In addition, the new phones provide students one-touch access to campus police, who can identify the exact payphone from which the call was made (the same holds true for 911 calls, which go directly to the City of Long Beach's 911 center).

In the not-so-distant future, Cal State plans to roll out a Campus Debit Card, which will include telecom services. "This is a trend in many universities," says Dase. "We tend to issue multiple cards for multiple purposes. Now we're consolidating all that onto one magnetic stripe-type debit card to be used for everything. . . food services, the bookstore, et cetera. Our campus is about one year away from that."

Over the next few years, Dase sees CSULB evolving toward "smart cards" with embedded microchips that can hold a student's complete portfolio of information for on- and off-campus transactions. Adding the new phones was one more step in that evolution.

Univ. of Delaware adopts web for secure campus business

Incoming University of Delaware students are immediately introduced to the Internet and the World Wide Web as a means for conducting routine campus business. They use secure Web browsers to confirm addresses, search course requirements, print schedules, access grade reports and financial aid information, and print transcripts and student bills using Web browsers at home, in residence halls, in computer labs, and from touch-screen kiosks. Proxy servers package data for the Web from existing COBOL programs. Other administrative systems being reworked for secure Web access this fall include a campuswide electronic forms system, employee access to personnel records, and the merging of student information with ID photograph images. For demonstration versions, see <http://www.mis.udel.edu/admin.html>.

ACUTA rep at Univ. of Delaware is Donna Borden.

USC community outreach goes online

Information about more than 200 community service programs offered by the University of Southern California is now accessible through the Internet. The Community Outreach Programs database provides information on hundreds of USC-administered educational, community, and academic outreach programs. It facilitates access to the programs by the community, and helps USC faculty, staff, students, and alumni identify possible volunteer activities. The URL is http://cwis.usc.edu:70/11/Campus_Life/Volunteers/NRC/compendium.

Alvin Hopkins represents USC at ACUTA events.

Univ. of Colorado at Boulder offers discussion lists for new students

The Office of Undergraduate Academic Affairs, First Year Experience Programs, is sponsoring discussion lists for new students at the University of Colorado/Boulder. FYENET95, for first-year students, encourages users to connect with other students with similar interests, learn about using computers, and receive reminders of registration and advising dates.

TRANSFERNET95 is a similar offering for transfer students.

UC Boulder is represented in ACUTA by Jeffrey Lipton.

Michigan partnership streamlines graduate admissions

A joint effort between the University of Michigan's Information Technology Division and the Rackham School of Graduate Studies is streamlining the graduate student admissions process. One year into a three-year partnership, the two have developed a client/server Graduate Admissions Data Set that gives 26 departments access to a wide variety of information about applicants to graduate schools, with 33 more departments to be added by December. Admissions officers can point and click on the fields from which they want to create their reports. The project follows guidelines established by the University's Data Access Project, begun by ITD in 1990.

Stephen Mayo is Univ. of Michigan's ACUTA rep.

Univ. of Arizona provides intra-campus conferencing system

The University of Arizona offers a campuswide electronic conferencing system consisting of nearly 200 conferences in three privacy levels—open to any UA faculty or staff with a CoSy account, closed conferences requiring a moderator's approval, and confidential groups (by invitation only). Training options include self-help guides, a video, two open conferences set up as interactive tutorials, and a 90-minute class that can be offered to individual departments.

ACUTA contact at Univ. of Arizona is Amelia Tynan.

Dartmouth library, Computing Services initiate joint planning

Inspired by an October 1994 meeting sponsored by the Coalition for Networked Information, the Dartmouth College library and computer services have begun a process of active collaboration. Librarian Margaret Otto and Director of Computing Larry Levine initiated a planning retreat in December for nearly 40 professionals from the two areas to encourage collaboration and begin long-range planning. Current activities include the Dartmouth College Information System (DCIS), a client/server system that makes library and other scholarly and administrative databases available over any IP network; joint provision of several databases, including sharing of licensing fees and purchasing and technical management; and a senior-level management planning group. Contact: larry.levine@dartmouth.edu.

Carole Clarke is Dartmouth College's ACUTA rep.

Thanks to CAUSE's electronically delivered Campuswatch for information on this page.

21st Century Technology

"No Hands Across America"

Business Week (9/14/95) tells an interesting story about Ralph, the digital driver powering a 1990 Pontiac Trans Sport minivan on a cross-country trek. The journey has been dubbed "No Hands Across America" by Ralph's creators, researchers at Carnegie Mellon. Ralph's brains, a Sparc LX portable workstation from RDI Computer Corp., enable the car to steer itself. Braking and acceleration are human-controlled. According to the story, the computer focuses on a rectangular square of highway, extending about 7 meters to the side and 20 meters ahead, and then maps that section into a grid that uses parallel features, such as lane stripes, for information on where to go next. Each analysis of the entire grid takes about a tenth of a second.

Computer-competency requirements for students

According to a report by the American Association of State Colleges and Universities (cited in the *Chronicle of Higher Education* 8/11/95), more than two-thirds of the 230 institutions surveyed either have or are considering computer-competency requirements for students. Interestingly, only a fifth had similar standards for professors. Nearly half of the institutions said they planned to charge for Internet access within the next three years, and two-thirds plan to levy fees for computer use on campus. To order the report (\$10/members, \$15/nonmembers), call 202/293-7070.

Computers: task-oriented and multi-lingual?

Physicist Greg Blonder, head of the Human Centered Engineering Research Laboratory at Bell Labs, says "PCs are one of the least innovative products...Year after year they run the same three programs—word processing, spreadsheets and games—despite what is essentially a factor of 1,000 improvement in processing for the same dollar." Consumers of the future, Blonder says in *Forbes* magazine (8/14/95), will be spending less money on general purpose computers and more on cheap machines that are task oriented, such as a checkbook-sized computer used only for bill-paying.

Meanwhile, Intel co-founder Gordon Moore predicts: "With the processing power and software developing together, we're not many years away from using the computer as a dictating machine. You'll be able to talk into a computer and it will print out what you said. Or you'll be able to type out a message in English — and it will be translated into Japanese or Hindi or Chinese instantly." (*Forbes* 9/11/95)

PBS goes the distance

Some 49 colleges will be participating in Public Broadcasting Service's distance learning program, "Going the Distance," a nationwide effort to coordinate adult telecourse offerings. Colleges will list their courses in PBS's catalog, and faculty will be responsible for answering students' questions and grading assignments. From the *Chronicle of Higher Education* (8/4/95).

Developing technical standards for multimedia

Apple Computer, MasterCard Intl., Oracle, and more than a dozen other companies have formed the Object Definition Alliance, working together to create a technical standard for creating, distributing, and viewing multimedia documents on a variety of machines, in much the same way that a TV program can be watched on any vendor's television set. The alliance is also working on developing multimedia standards for electronic commerce, tracking copyrighted material, and sharing compound documents. Says a Reebok International VP, "...a lot of the development work we have done is in the Macintosh environment, and deployment is being done in the Windows environment. You have issues of compatibility with developing images in one place and deploying them somewhere else." (From *Information Week* 8/14/95)

Kiosks in Canada

Canada's Human Resources Department has announced it will replace 5,000 public service jobs with kiosks that provide a full range of automated social services. (*Toronto Star* 8/3/95)

Robots learn to work together

They've long been viewed as the ideal workers: tireless, submissive, predictable...Now they're even more efficient than ever. At Brandeis University a computer scientist has been teaching the Nerd Herd, a group of robots, to work together and learn from each other. Each one is programmed to accomplish a task. A rating system then rewards for tasks completed and subtracts points for mistakes. With just 15 minutes of practice, the robots were working together to accomplish the task twice as quickly as when they worked independently. Quoted in *Discover* magazine (Sept. '95), the researcher says she imagines one robot might emerge as a leader because it happens to be the most efficient. "But if it stops being efficient, some other robot will take over," she said.

From ACUTA Headquarters

Representatives of twelve major telecommunications associations met on September 17 in San Diego for the purpose of examining the future mission and direction

of the Telecommunications Associations Council (TAC). I had the pleasure of representing ACUTA at the annual TAC meeting, which was hosted by TCA in conjunction with their annual conference and trade show.

Our participation in TAC benefits ACUTA members in several ways:

- A reciprocal agreement has been reached to permit ACUTA members to attend courses offered by fellow TAC associations at member discounts.
- Through TAC membership, we gain information and benefit from the huge government relations expenditures of the larger telecom associations in Washington. A recent survey showed that four of the TAC member groups spend in excess of \$120,000 each per year on regulatory affairs at the local, state/province, and national levels. Communication on regulatory issues offers the opportunity for coordinated action on regulatory issues on which we are in agreement—resulting in a more unified voice for telecom users.
- We are working on linking ACUTA's Home Page on the World Wide Web to the sites of other TAC member associations, so ACUTA members can benefit from information provided by other telecom associations on the Internet. Expect these links within 60 days.

Some ideas advanced for future cooperation among TAC organizations include a coordinated effort to study the future of the telecom industry; coordinated input from user associations on national and international telecom

standards committees; interface with the media; cost-sharing on activities that are duplicated among the associations; and development of a menu of services available from each association, based on their strengths.

From my participation in several TAC meetings, it is apparent that there is much we can share with other telecom associations to benefit both our members and theirs. However, it is clear that ACUTA occupies a unique "niche" in the field of associations. No other group focuses specifically on the needs of higher education communications technology users. In times of tight budgets and limited opportunities for professional memberships, education and travel, the single best investment for college and university communications professionals remains with ACUTA. More general telecom groups, user groups, and state associations certainly have valuable offerings, but only ACUTA is intensely focused on helping our peers survive and prosper in a higher education environment.

Beginning in January, 1996, Ruth Michalecki of the University of Nebraska-Lincoln and Past President of ACUTA, will assume the position of Executive Director of TAC. (Ruth won't be leaving the University—just adding TAC to her long list of volunteer activities.) We are looking forward to working with Ruth to implement increased cooperation among telecom associations.

Also beginning with the 1996 Annual Conference in Chicago, ACUTA will be hosting the next two TAC meetings. This will be a unique opportunity for us to showcase our association to other telecom organizations around the world, and we are looking forward to hosting our telecom colleagues at this important annual event. I'm looking forward to the interchange, and hope you will join me in welcoming TAC representatives to our Silver Anniversary celebration.



Jeri A.
Semer

ACUTA
Executive
Director

Plan early for Phoenix!

Lisa Cheshire
ACUTA Meetings Manager

Make travel plans for ACUTA's Winter Seminar as soon as possible—the Phoenix area will be full of activity in January!

As sports fans are probably well aware, our Winter Seminar is not the only exciting activity happening in the Phoenix area this January! The Phoenix Open golf tournament will take place Jan. 22-28 and Super Bowl XXX will be Jan. 28.

Super Bowl XXX is expected to draw over 100,000 additional visitors to the Phoenix area and the week leading up to the game is packed with more than 70 events.

The Sheraton San Marcos in Chandler (just southeast of Phoenix) will be the site for our dual track seminar, *Student Services: A Suite of*

Services and Wireless Technologies Tutorial, January 21-24. These hot topics along with an economical hotel room rate of \$85 per night should lead to a well-attended event. If you plan to add vacation time prior to or after the seminar, your options may be limited by the sporting events.

The ACUTA 1996 Conference and Seminar Planning Guide, mailed recently, contains a descriptive paragraph on the two program tracks as well as registration fees. Information on this seminar is also available on our internet home page at: <http://www.acuta.org> or by calling the office at (606) 278-3338. Our full seminar brochure will be mailed early in November.

For reservations at the Sheraton San Marcos call (602) 963-6655 (ask for the ACUTA group rate). For a Phoenix area visitors packet, call the Phoenix & Valley of the Sun Convention and Visitors Bureau at (602) 252-5588. For tickets to the big game, good luck!



Association of College & University
Telecommunications Administrators
152 W. Zandale Dr., Suite 200
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Editor's Notes...



Thanks to all who entered the **25th Anniversary logo contest!** We had dozens of entries—literally—and choosing one was no easy task. We look forward to an exciting anniversary year, beginning with the announcement of our logo contest winner in the November issue of the *ACUTA News*.... Did you notice on page 2: **Howard Lowell is our first Emeritus Member!** Howard retired from Colorado State in June. We congratulate him on his retirement, and commend him for wanting to continue his many years of valuable service to ACUTA. We hope others will consider this option when they retire from day-to-day involvement in campus telecommunications. (See the August *ACUTA News* for more details.)...If videoconferencing is a part of your departmental responsibilities, you'll be glad to know that standards are being developed. *Network World* (9/25/96) reports that Versit, a four-member industry group, will launch a set of specifications on the WWW assuring that any products based on the Intl Telecommunication Union H.320 standard for videoconferencing, audio conferencing, and compression will work together.... Several times lately I've received information about what's happening on different campuses without even asking for it. I love it! I'm thrilled that more of you are remembering to send me press releases, newsletters, e-mail, and other forms of communication that help me keep our membership informed! Keep those cards and letters coming!... Pat Scott, ACUTA, 152 W. Zandale, Ste. 200 Lexington, KY 40503. Phone (606) 278-3338 or send e-mail to psscott@acuta.org.

Area Code Changes

Location	Existing Area Code	Relief Area Code	Date
Atlanta	404	770	8/95
Connecticut	203	860	8/95
Tennessee	615	423	9/95
Bermuda	809	441	10/95
Miami	305	954	11/95
Oregon	503	541	11/95
S. Carolina	803	864	12/95
No. Florida	904	352	12/95
Missouri	314	573	1/96
Chicago	708	847	1/96
Dallas	214	972	2/96
So. Calif.	310	562	2/96
Ohio	216	330	Q1 '96
Chicago	708	630	8/96
Brit. Col.	604	250	10/96

Call 888...It's toll free

AT&T Corp. wants to educate consumers and businesses about the new "888" toll-free numbers scheduled to be introduced early next year. The "888" numbers are intended to supplement the dwindling supply of "800" numbers.

For Sale

- Northern Telecom Option 81 with XT peripherals
- Two Northern Telecom NT Option 61 ready with supporting peripherals

All systems on release 19.32

Contact Dave Reilly, Univ. of Wyoming, phone (307) 766-3990 or e-mail dreilly@uwyo.edu

Position Available

Switch Technician

University of San Francisco

The Univ. of San Francisco Telecommunications Office seeks a qualified individual responsible for the day-to-day operations of PBX (telephone switch) and DSC (voice mail system). Other duties include handling telecommunications service/trouble calls; assisting with telecommunication and network installations; monitoring network; supervising student assistants; and performing other related duties.

Qualifications: B.S. or equivalent. Ability to work independently, work well with others, good technical trouble-shooting skills. Two years PBX voice mail experience; one year directly working on Intecom PBX and Digital Sound voice mail. Should be able to lift 100 pounds.

To apply: Send letter of application and resumé to Personnel Services, USF, 2130 Fulton St., San Francisco, CA 94117-1080 or fax to (415) 386-1074. EEO/AA/ADA

NACAS Teleconference

"Privatization in Higher Education"

October 18, 1995

3:00 -4:30 p.m. Eastern Daylight Time

Program will focus on critical issues related to privatization in higher ed. Panel discussion will address existing campus conditions that support self-operation, and positive and negative implications of outsourcing programs and services.

For details, call NACAS at 540/885-8826

Q: Why is it ESPECIALLY important to make your plans early if you're going to attend the Winter Seminar in Phoenix?

(Answer on page 11)